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WHITE SANDS MISSILE RANGE, NEW MEXICO.

DR-410

March 1969

AD

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METEOROLOGICAL DATA REPORT

NIKE-HYDAC 3TV-84
(27 February 1969)

BY

GORDON L. DUNAWAY

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WHITE SANDS MISSILE RANGE, NEW MEXICO

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NIKE-HYDAC STV-84
(27 February 1969)

By

Gordon L Dunaway

DR-410

March 1969

DA Task 1T665702D127-02

ATMOSPHERIC SCIENCES OFFICE
WHITE SANDS MISSILE RANGE, NEW MEXICO

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ABSTRACT

Meteorological data gathered for the launching of Nike-Hydac STV-84 are presented for the Space and Missile Systems Organization, AFMDC, Holloman Air Force Base, New Mexico, and for ballistic studies. The data appear, along with calculated ballistic data, in tabular form.

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INTRODUCTION

Nike-Hydac STV-84 was launched from Launch Complex 33, L-314, White Sands Missile Range (WSMR), New Mexico, at 0914 hours MST, 27 February 1969.

Meteorological data used in conjunction with theoretical calculations to predict rocket impact were collected by the Meteorological Support Technical Area, Atmospheric Sciences Office (ASO), WSMR, New Mexico. The Ballistic Meteorologists for this firing were Gordon L. Dunaway and SP/6 George Anderson.

DISCUSSION

Wind data for the first 216 feet above the surface were obtained from a system composed of Five Aerovanes mounted on a 200-foot tower and cabled to component wind indicators.

From 216 to 4,270 feet above the surface, wind data were obtained from T-9 Radar-tracked balloon ascent.

Temperature, pressure and humidity data, along with upper wind data from the surface to 100,000 feet above the surface, were obtained from standard rawinsonde observations.

Mean wind component values in each ballistic zone were determined from vertical cross sections by the equal-area method.

Theoretical rocket performance values and ballistic factors as a function of altitude were provided by ASO and are the basis for data appearing in Table I.

PAYLOAD		220	Pounds
CORIOLIS DISPLACEMENT	WEST	4.7	Miles
SECOND-STAGE IGNITION	TIME	20.0	Seconds
	ALTITUDE	35,880	Feet MSL
PEAK	TIME	232	Seconds
	ALTITUDE	702,500	Feet MSL
UNIT WIND EFFECT	HEAD	2.158	Miles/MPH
	CROSS	2.244	Miles/MPH
	TAIL	2.167	Miles/MPH
TOWER TILT EFFECT		14.5	Miles/Degree

TABLE I. THEORETICAL ROCKET PERFORMANCE VALUES
NIKE-HYDAC STV-84

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
11- 60	.135
60-108	.075
108-148	.070
148-184	.031
184-216	.029
216-300	.052
300-400	.048
400-600	.082
600-800	.058

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
800- 1000	.039
1000- 1400	.071
1400- 2000	.065
2000- 2500	.031
2500- 3000	.027
3000- 3500	.010
3500- 4270	.009
4270-11000	-.024
11000-16000	-.018

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
16000-21000	-.018
21000-26000	-.012
26000-31880	-.012
31880-36000	.132
36000-41000	.058
41000-46000	.032
46000-56000	.018
56000-66000	.011
66000-72260	.001

TABLE II. BALLISTIC FACTORS
NIKE-HYDAC STV-84

AERO- VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR									
	1 0700 MST		2 0730 MST		3 0800 MST		4 0815 MST		5 0830 MST	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
1	3.0N	0.0	2.0N	2.0E	8.0N	4.0E	14.0N	3.0E	12.0N	2.0E
2	5.0	2.0E	4.0	4.0	10.0	6.0	15.0	3.0	14.0	6.0
3	6.0	0.0	6.0	3.0	12.0	6.0	16.0	3.0	16.0	7.0
4	6.0	1.0W	7.0	2.0	13.0	10.0	17.0	5.0	20.0	8.0
5	6.0	3.0	6.0	0.0	14.0	9.0	16.0	6.0	18.0	6.0

AERO- VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR							
	6 0845 MST		7 0855 MST		8 0905 MST		9 0914 MST	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
1	18.0N	2.0E	10.0N	3.0E	12.0N	2.0E	15.0N	3.0E
2	17.0	2.0	15.0	8.0	15.0	4.0	18.0	3.0
3	16.0	4.0	20.0	9.0	19.0	6.0	20.0	3.0
4	20.0	4.0	20.0	10.0	19.0	7.0	20.0	3.0
5	22.0	2.0	20.0	7.0	18.0	8.0	20.0	3.0

TABLE III. ANEMOMETER WIND SPEED AND DIRECTION
NIKE-HYDAC STV-84

* Heights corresponding to Aerovane Numbers: 1 = 35 Feet 3 = 128 Feet 5 = 200 Feet
2 = 88 Feet 4 = 163 Feet

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN MILES PER HOUR									
	1		2		3		4		5	
	0700 MST		0730 MST		0800 MST		0815 MST		0830 MST	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
216- 300	4.0N	1.0W	6.0N	3.5W	15.0N	9.0E	16.5N	5.5E	19.0N	6.0E
300- 400	5.0	5.0	6.0	10.5	17.0	8.0	18.0	4.5	20.0	6.0
400- 600	6.5	11.0	7.5	13.0	17.5	8.5	20.0	5.5	22.0	6.5
600- 800	7.0	13.0	8.5	13.5	13.0	7.5	23.0	7.0	26.5	6.5
800-1000	7.0	13.0	7.0	12.0	11.0	5.0	24.0	7.0	28.0	5.0
1000-1400	11.0	15.5	9.0	12.0	9.0	1.5	17.5	3.5	25.5	7.0
1400-2000	14.0	17.5	14.0	11.0	7.0	9.5W	12.0	0.0	13.5	2.5
2000-2500	15.5	17.0	14.5	11.5	9.0	9.0	8.0	7.0W	10.0	4.5W
2500-3000	15.5	15.0	17.0	17.5	13.0	8.5	10.0	8.0	10.0	9.0
3000-3500	13.5	20.0	16.0	22.0	13.0	10.0	10.5	11.0	10.5	12.0
3500-4270	10.5	23.0	11.0	22.0	11.0	15.5	9.5	17.0	9.0	15.0

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA
NIKE-HYDAC STV-84

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN MILES PER HOUR									
	6 0845 MST		7 0855 MST		8 0905 MST		9 0914 MST			E-W
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W		
									N-S	
216- 300	22.0N	2.5E	20.0N	7.0E	21.5N	5.5E	21.0N	4.0E		
300- 400	22.0	3.5	20.0	6.5	19.0	3.0	22.0	4.5		
400- 600	21.5	6.0	20.0	5.5	17.0	3.5	24.0	4.5		
600- 800	23.0	6.0	20.5	6.0	22.0	6.0	27.5	6.0		
800-1000	26.0	4.5	26.0	7.0	26.0	4.5	27.0	4.5		
1000-1400	24.0	3.5	29.0	5.5	25.0	4.0	25.0	5.0		
1400-2000	15.5	2.0	22.0	3.0	20.0	3.0	17.5	2.0		
2000-2500	9.0	3.0W	11.0	0.0	14.0	1.0W	8.0	2.5W		
2500-3000	8.5	9.5	8.0	10.0W	8.0	6.0	8.0	7.0		
3000-3500	9.0	12.5	8.0	12.5	4.5	12.5	8.5	12.0		
3500-4270	7.0	15.0	5.5	16.0	6.0	16.0	8.0	19.0		

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA (CONT)
NIKE-HYDAC STV-84

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN KNOTS					
	1		2			
	0600 MST		0900 MST			
	N-S	E-W	N-S	E-W	N-S	E-W
4270-11000	8.5N	23.0W	9.0N	24.5W		
11000-16000	12.0	33.0	14.0	24.5		
16000-21000	13.0	35.5	16.5	28.5		
21000-26000	8.5	49.0	24.5	42.5		
26000-31880	9.0	51.0	19.0	52.5		
31880-36000	0.0	68.0	13.0	73.0		
36000-41000	0.0	80.0	0.0	80.0		
41000-46000	0.0	68.0	0.0	75.0		
46000-56000	0.0	45.0	0.0	53.0		
56000-66000	0.0	8.0	3.5N	19.5		
66000-72260	0.0	21.0	2.0	12.0		

TABLE V. RAWINSONDE-MEASURED WIND DATA
NIKE-HYDAC STV-84

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0600 HRS MST
ASCENSION NO. 197

SIGNIFICANT LEVEL DATA
0825001905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE VI

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
877.3	3989.0	8.0	-2.9	46.0
867.0	4310.8	11.1	-0.7	44.0
714.0	9505.8	-2.1	-9.1	59.0
697.0	10135.8	-1.4	-20.4	22.0
681.0	10743.8	-1.0	-26.0	13.0
469.0	20133.3	-22.2	-39.2	20.0
375.0	25402.3	-35.0	-49.3	22.0
301.0	30369.6	-42.3	0.	-0. **
274.0	32433.6	-48.4	0.	-0. **
244.0	34917.1	-53.7	0.	-0. **
234.0	35805.8	-52.2	0.	-0. **
166.0	43040.3	-57.2	0.	-0. **
159.0	43939.2	-56.8	0.	-0. **
98.0	53787.0	-67.9	0.	-0. **
82.0	57072.8	-69.0	0.	-0. **
76.0	58829.2	-64.8	0.	-0. **
62.0	62927.0	-65.1	0.	-0. **
60.0	63593.8	-60.7	0.	-0. **
56.0	65007.0	-62.0	0.	-0. **
50.0	67344.7	-57.8	0.	-0. **
40.0	71962.6	-60.7	0.	-0. **
38.0	73024.0	-58.0	0.	-0. **
30.0	77916.4	-60.7	0.	-0. **
18.0	88594.9	-53.9	0.	-0. **
5.8	101862.7	-42.2	0.	-0. **
6.4	111615.3	-32.3	0.	-0. **

** RELATIVE HUMIDITY NOT SUPPLIED. ZERO VALUE ASSUMED FOR COMPUTATIONS.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 C600 HRS MST
ASCENSION NO. 197

UPPER AIR DATA
0825003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 4°8,580 FEET
N 185,045 FEET

TABLE VII

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
3989.0	877.3	8.0	-2.9	46.0	1084.9	653.6	0.	0.	1.000265
4000.0	876.9	8.1	-2.8	45.9	1084.0	653.7	359.7	0.1	1.000265
4500.0	866.9	10.6	-0.9	44.5	1054.4	656.7	344.0	4.1	1.000262
5000.0	845.0	9.3	-1.7	46.0	1039.6	655.2	328.4	8.1	1.000257
5500.0	825.3	8.1	-2.4	47.4	1025.0	653.7	312.8	12.0	1.000253
6000.0	814.0	6.8	-3.2	48.9	1010.7	652.2	297.1	16.0	1.000249
6500.0	798.9	5.5	-4.0	50.3	996.6	650.7	292.0	18.1	1.000244
7000.0	784.1	4.3	-4.8	51.8	982.7	649.2	290.4	19.4	1.000240
7500.0	769.6	3.0	-5.6	53.2	969.1	647.7	289.3	19.8	1.000236
8000.0	755.3	1.7	-6.5	54.7	955.6	646.2	287.6	20.3	1.000232
8500.0	741.4	0.5	-7.3	56.1	942.4	644.7	285.2	20.8	1.000228
9000.0	727.6	-0.8	-8.2	57.5	929.3	643.1	282.8	22.2	1.000224
9500.0	714.2	-2.1	-9.1	59.0	916.4	641.6	280.3	23.9	1.000220
10000.0	700.6	-1.6	-16.9	30.0	898.0	642.0	278.8	25.4	1.000208
10500.0	687.4	-1.2	-23.4	16.6	880.1	642.3	277.4	26.8	1.000201
11000.0	674.1	-1.6	-26.3	13.2	864.5	641.8	277.6	27.7	1.000196
11500.0	660.8	-2.7	-26.9	13.6	851.1	640.5	277.9	28.6	1.000193
12000.0	647.9	-3.8	-27.6	13.9	837.8	639.1	280.0	29.0	1.000190
12500.0	635.1	-5.0	-28.2	14.3	824.8	637.8	282.5	29.3	1.000187
13000.0	622.6	-6.1	-28.8	14.7	812.0	636.4	285.6	29.3	1.000184
13500.0	610.4	-7.2	-29.5	15.1	799.5	635.1	288.9	29.0	1.000181
14000.0	598.4	-8.4	-30.2	15.4	787.1	633.7	291.3	28.9	1.000178
14500.0	586.6	-9.5	-30.9	15.8	774.9	632.4	293.3	29.0	1.000175
15000.0	575.1	-10.6	-31.5	15.2	763.0	631.0	294.4	28.5	1.000172
15500.0	562.8	-11.7	-32.2	16.5	751.2	629.6	295.0	27.8	1.000170
16000.0	552.7	-12.9	-33.0	16.9	739.6	628.3	294.1	28.3	1.000167
16500.0	541.8	-14.0	-33.7	17.3	728.3	626.9	294.3	29.1	1.000164
17000.0	531.2	-15.1	-34.4	17.7	717.1	625.5	295.5	30.3	1.000162
17500.0	520.7	-16.3	-35.1	18.0	706.1	624.2	296.2	32.5	1.000159
18000.0	510.5	-17.4	-35.9	18.4	695.2	622.8	296.3	34.5	1.000156

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 C600 HRS MST
ASCENSION NO. 197

UPPER AIR DATA
0625003905
WHITE SANDS SITE

WSM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE VII (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE			KNOTS	KNOTS			
18500.0	500.4	-18.5	-36.7	18.8	684.6	621.4	295.4	295.4	35.9	1.000154
19000.0	490.6	-19.6	-37.4	19.2	674.1	620.0	294.6	294.6	36.3	1.000152
19500.0	480.9	-20.8	-38.2	19.5	663.8	618.6	293.8	293.8	36.3	1.000149
20000.0	471.5	-21.9	-39.0	19.9	653.7	617.3	293.1	293.1	35.5	1.000147
20500.0	461.8	-23.1	-39.9	20.1	643.3	615.8	292.5	292.5	34.9	1.000144
21000.0	452.1	-24.3	-40.8	20.3	632.8	614.3	292.0	292.0	34.9	1.000142
21500.0	442.6	-25.5	-41.8	20.5	622.6	612.8	291.0	291.0	35.6	1.000140
22000.0	433.3	-26.7	-42.7	20.7	612.5	611.3	289.6	289.6	37.0	1.000137
22500.0	424.2	-27.9	-43.7	20.9	602.7	609.8	287.5	287.5	38.4	1.000135
23000.0	415.3	-29.2	-44.7	21.1	592.9	608.2	285.2	285.2	39.7	1.000133
23500.0	406.5	-30.4	-45.6	21.3	583.4	606.7	283.2	283.2	40.2	1.000131
24000.0	398.0	-31.6	-46.6	21.5	574.0	605.2	281.3	281.3	40.2	1.000128
24500.0	389.6	-32.8	-47.6	21.7	564.8	603.7	279.5	279.5	39.3	1.000126
25000.0	381.5	-34.0	-48.5	21.8	555.8	602.1	279.3	279.3	41.1	1.000124
25500.0	373.4	-35.1	-49.6	21.6**	546.6	600.7	279.7	279.7	43.5	1.000122
26000.0	365.2	-35.9	-51.2	19.4**	536.3	599.8	280.7	280.7	45.3	1.000120
26500.0	357.2	-36.6	-52.8	17.1**	526.2	598.9	281.8	281.8	46.9	1.000117
27000.0	349.4	-37.3	-54.6	14.9**	516.2	597.9	282.9	282.9	48.3	1.000115
27500.0	341.8	-38.1	-56.5	12.7**	506.5	597.0	284.3	284.3	49.8	1.000113
28000.0	334.3	-38.8	-58.7	10.5**	497.0	596.1	285.5	285.5	51.0	1.000111
28500.0	327.0	-39.6	-61.1	8.3**	487.7	595.1	285.7	285.7	51.5	1.000109
29000.0	319.8	-40.3	-64.0	6.1**	478.5	594.2	285.0	285.0	51.9	1.000107
29500.0	312.8	-41.0	-67.8	3.9**	469.5	593.2	283.8	283.8	52.3	1.000105
30000.0	306.0	-41.6	-74.2	1.6**	460.7	592.3	282.2	282.2	51.4	1.000103
30500.0	299.2	-42.7	0.	0. **	452.4	591.1	280.6	280.6	50.1	1.000101
31000.0	292.5	-44.2	0.	0. **	445.0	589.2	281.1	281.1	50.5	1.000099
31500.0	285.9	-45.6	0.	0. **	437.8	587.3	282.0	282.0	51.3	1.000097
32000.0	279.5	-47.1	0.	0. **	430.8	585.4	282.9	282.9	52.8	1.000096
32500.0	273.2	-48.5	0.	0. **	423.7	583.6	283.7	283.7	54.7	1.000094
33000.0	266.8	-49.6	0.	0. **	415.9	582.2	284.0	284.0	54.7	1.000093

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
 27 FEB. 69 0600 HRS MST
 ASCENSION NO. 157

UPPER AIR DATA
 C825003905
 WHITE SANDS SITE

WSTM SITE COORDINATES
 E 488,580 FEET
 N 185,045 FEET

TABLE VII (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
33500.0	260.7	-50.7	0.	-0. **	408.3	580.8	284.2	54.1	1.000001
34000.0	254.7	-51.7	0.	-0. **	400.8	579.4	282.9	54.9	1.000039
34500.0	248.8	-52.8	0.	-0. **	393.4	578.0	281.3	56.0	1.000088
35000.0	243.0	-53.6	0.	-0. **	385.6	577.0	281.3	60.2	1.000086
35500.0	237.4	-52.7	0.	-0. **	375.2	578.1	281.4	64.6	1.000084
36000.0	231.9	-52.3	0.	-0. **	365.8	578.6	281.4	67.9	1.000081
36500.0	226.4	-52.7	0.	-0. **	357.8	578.2	280.9	70.3	1.000080
37000.0	221.1	-53.0	0.	-0. **	350.0	577.7	280.1	71.9	1.000078
37500.0	215.9	-53.4	0.	-0. **	342.3	577.3	279.0	72.2	1.000076
38000.0	210.9	-53.7	0.	-0. **	334.8	576.8	277.5	71.3	1.000075
38500.0	205.9	-54.1	0.	-0. **	327.5	576.3	276.0	70.3	1.000073
39000.0	201.1	-54.4	0.	-0. **	320.3	575.9	274.6	71.6	1.000071
39500.0	196.4	-54.8	0.	-0. **	313.3	575.4	273.2	73.0	1.000070
40000.0	191.8	-55.1	0.	-0. **	306.4	575.0	271.4	74.8	1.000068
40500.0	187.3	-55.4	0.	-0. **	299.7	574.5	269.5	76.8	1.000067
41000.0	182.9	-55.8	0.	-0. **	293.1	574.1	267.8	78.4	1.000065
41500.0	178.6	-56.1	0.	-0. **	286.7	573.6	266.2	79.8	1.000064
42000.0	174.4	-56.5	0.	-0. **	280.4	573.2	265.5	82.7	1.000062
42500.0	170.3	-56.8	0.	-0. **	274.3	572.7	265.1	86.1	1.000061
43000.0	166.3	-57.2	0.	-0. **	268.3	572.2	265.9	87.0	1.000060
43500.0	162.4	-57.0	0.	-0. **	261.7	572.5	266.7	87.3	1.000058
44000.0	158.5	-56.9	0.	-0. **	255.4	572.6	267.5	85.5	1.000057
44500.0	154.7	-57.4	0.	-0. **	249.8	571.9	267.9	82.5	1.000056
45000.0	150.9	-58.0	0.	-0. **	244.4	571.1	267.4	78.2	1.000054
45500.0	147.3	-58.6	0.	-0. **	239.1	570.4	267.1	73.4	1.000053
46000.0	142.7	-59.1	0.	-0. **	233.9	569.6	265.9	68.4	1.000052
46500.0	140.2	-59.7	0.	-0. **	228.8	568.9	264.4	64.6	1.000051
47000.0	136.3	-60.2	0.	-0. **	223.9	568.1	262.7	61.6	1.000050
47500.0	132.5	-60.8	0.	-0. **	219.0	567.4	261.2	59.6	1.000049
48000.0	130.2	-61.4	0.	-0. **	214.3	566.6	259.8	58.1	1.000048

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 C600 HRS MST
ASCENSION NO. 197

UPPER AIR DATA
0825003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE VII (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
48500.0	127.1	-61.9	0.	-0.	209.6	565.9	258.8	258.8	57.5	1.000047
49000.0	124.0	-62.5	0.	-0.	205.1	565.1	258.0	258.0	57.2	1.000046
49500.0	121.0	-63.1	0.	-0.	200.6	564.4	256.9	256.9	58.0	1.000045
50000.0	118.0	-63.6	0.	-0.	196.3	563.6	255.7	255.7	59.3	1.000044
50500.0	115.2	-64.2	0.	-0.	192.1	562.9	253.0	253.0	59.2	1.000043
51000.0	112.4	-64.8	0.	-0.	187.9	562.1	250.1	250.1	59.0	1.000042
51500.0	109.7	-65.3	0.	-0.	183.8	561.3	248.0	248.0	59.1	1.000041
52000.0	107.0	-65.9	0.	-0.	179.9	560.6	246.1	246.1	59.2	1.000040
52500.0	104.4	-66.4	0.	-0.	176.0	559.8	245.3	245.3	58.9	1.000039
53000.0	101.9	-67.0	0.	-0.	172.2	559.1	245.2	245.2	58.1	1.000038
53500.0	99.4	-67.6	0.	-0.	168.5	558.3	245.9	245.9	57.7	1.000037
54000.0	97.0	-68.0	0.	-0.	164.6	557.7	248.3	248.3	58.0	1.000036
54500.0	94.5	-68.1	0.	-0.	160.7	557.5	250.7	250.7	58.3	1.000035
55000.0	92.2	-68.3	0.	-0.	156.8	557.3	253.3	253.3	59.2	1.000034
55500.0	89.9	-68.5	0.	-0.	153.0	557.1	256.0	256.0	60.1	1.000033
56000.0	87.6	-68.6	0.	-0.	149.3	556.8	257.3	257.3	57.7	1.000032
56500.0	85.4	-68.8	0.	-0.	145.7	556.6	258.6	258.6	55.1	1.000031
57000.0	83.3	-69.0	0.	-0.	142.2	556.4	260.5	260.5	50.6	1.000030
57500.0	81.2	-68.0	0.	-0.	138.0	557.7	262.6	262.6	45.5	1.000029
58000.0	79.2	-66.8	0.	-0.	133.8	559.4	266.2	266.2	40.3	1.000028
58500.0	77.3	-65.6	0.	-0.	129.7	561.0	271.2	271.2	35.3	1.000027
59000.0	75.4	-64.8	0.	-0.	126.0	562.0	276.7	276.7	30.7	1.000026
59500.0	73.5	-64.8	0.	-0.	123.0	562.0	283.8	283.8	28.1	1.000025
60000.0	71.7	-64.9	0.	-0.	120.0	561.9	290.9	290.9	25.4	1.000024
60500.0	69.9	-64.9	0.	-0.	117.0	561.9	296.8	296.8	23.0	1.000023
61000.0	68.2	-65.0	0.	-0.	114.2	561.8	302.6	302.6	20.6	1.000022
61500.0	66.6	-65.0	0.	-0.	111.4	561.8	307.3	307.3	18.1	1.000021
62000.0	64.9	-65.0	0.	-0.	108.7	561.7	310.9	310.9	15.3	1.000020
62500.0	63.3	-65.1	0.	-0.	106.0	561.7	314.0	314.0	12.7	1.000019
63000.0	61.8	-64.6	0.	-0.	103.2	562.3	311.7	311.7	11.1	1.000018

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
 27 FEB. 69 C600 HRS MST
 ASCENSION NO. 197

UPPER AIR DATA
 08250003905
 WHITE SANDS SITE

WSTM SITE COORDINATES
 E 488,580 FEET
 N 185,045 FEET

TABLE VII (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	66.3	-61.3	0.	-0. **	99.1	566.7	309.4	9.4	1.000022
64000.0	58.8	-61.1	0.	-0. **	96.6	567.0	304.1	8.7	1.000022
64500.0	57.4	-61.5	0.	-0. **	94.5	566.4	297.1	8.5	1.000021
65000.0	56.0	-62.0	0.	-0. **	92.4	565.8	290.2	8.6	1.000021
65500.0	54.7	-61.1	0.	-0. **	89.8	567.0	285.1	12.2	1.000021
66000.0	53.4	-60.2	0.	-0. **	87.3	568.2	279.9	15.9	1.000019
66500.0	52.1	-59.3	0.	-0. **	84.9	569.4	276.1	18.1	1.000019
67000.0	50.8	-58.4	0.	-0. **	82.5	570.6	273.5	18.8	1.000018
67500.0	49.6	-57.9	0.	-0. **	80.3	571.3	271.0	19.6	1.000018
68000.0	48.4	-58.2	0.	-0. **	78.5	570.9	265.9	18.4	1.000017
68500.0	47.3	-58.5	0.	-0. **	76.8	570.4	260.6	17.1	1.000017
69000.0	46.2	-58.8	0.	-0. **	75.0	570.0	253.0	15.3	1.000017
69500.0	45.1	-59.2	0.	-0. **	73.4	569.6	241.2	12.5	1.000016
70000.0	44.0	-59.5	0.	-0. **	71.7	569.2	229.3	9.7	1.000016
70500.0	42.9	-59.8	0.	-0. **	70.1	568.8	233.7	11.2	1.000016
71000.0	41.9	-60.1	0.	-0. **	68.5	568.4	245.7	14.7	1.000015
71500.0	40.9	-60.4	0.	-0. **	67.0	567.9	257.7	18.3	1.000015
72000.0	39.9	-60.6	0.	-0. **	65.5	567.7	262.8	21.3	1.000015
72500.0	39.0	-59.3	0.	-0. **	63.5	569.4	267.0	24.2	1.000014
73000.0	38.0	-58.1	0.	-0. **	61.6	571.1	271.2	27.1	1.000014
73500.0	37.1	-58.3	0.	-0. **	60.2	570.8	275.7	28.6	1.000013
74000.0	36.2	-58.5	0.	-0. **	58.8	570.4	280.3	30.0	1.000013
74500.0	35.4	-58.8	0.	-0. **	57.5	570.1	285.6	29.7	1.000013
75000.0	34.5	-59.1	0.	-0. **	56.2	569.7	294.0	22.0	1.000013
75500.0	33.7	-59.4	0.	-0. **	54.9	569.3	302.3	14.3	1.000012
76000.0	32.9	-59.6	0.	-0. **	53.7	569.0	309.7	9.6	1.000012
76500.0	32.1	-59.9	0.	-0. **	52.5	568.6	315.3	10.3	1.000012
77000.0	31.4	-60.2	0.	-0. **	51.3	568.2	320.9	11.0	1.000011
77500.0	30.6	-60.5	0.	-0. **	50.1	567.9	322.8	11.1	1.000011
78000.0	29.9	-60.6	0.	-0. **	49.0	567.6	321.0	10.6	1.000011

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0600 HRS MST
ASCENSION NO. 197

UPPER AIR DATA
0825003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE VII (Cont)

GECMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
78500.0	25.2	-60.3	0.	-0. **	47.8	568.0	319.2	10.2	1.000011
79000.0	28.5	-60.0	0.	-0. **	46.6	568.5	319.1	10.4	1.000010
79500.0	27.8	-59.7	0.	-0. **	45.4	568.9	320.0	11.1	1.000010
80000.0	27.2	-59.4	0.	-0. **	44.3	569.3	320.9	11.7	1.000010
80500.0	26.5	-59.1	0.	-0. **	43.1	569.7	309.1	8.9	1.000010
81000.0	25.9	-58.7	0.	-0. **	42.1	570.2	293.2	4.9	1.000009
81500.0	25.3	-58.4	0.	-0. **	41.0	570.6	277.2	1.0	1.000009
82000.0	24.7	-58.1	0.	-0. **	40.0	571.0	275.1	2.1	1.000009
82500.0	24.1	-57.8	0.	-0. **	39.0	571.4	275.1	4.1	1.000009
83000.0	23.5	-57.5	0.	-0. **	38.0	571.9	275.2	6.1	1.000008
83500.0	23.0	-57.1	0.	-0. **	37.0	572.3	275.2	6.6	1.000008
84000.0	22.4	-56.8	0.	-0. **	36.1	572.7	275.3	7.1	1.000008
84500.0	21.9	-56.5	0.	-0. **	35.2	573.1	276.2	7.6	1.000008
85000.0	21.4	-56.2	0.	-0. **	34.3	573.5	291.1	9.3	1.000008
85500.0	20.9	-55.9	0.	-0. **	33.5	574.0	305.9	11.1	1.000007
86000.0	20.4	-55.6	0.	-0. **	32.6	574.4	321.0	12.3	1.000007
86500.0	19.9	-55.2	0.	-0. **	31.8	574.8	337.3	10.4	1.000007
87000.0	19.4	-54.9	0.	-0. **	31.0	575.2	353.6	8.4	1.000007
87500.0	19.0	-54.6	0.	-0. **	30.2	575.6	3.3	7.2	1.000007
88000.0	18.5	-54.3	0.	-0. **	29.5	576.1	353.9	8.2	1.000007
88500.0	18.1	-54.0	0.	-0. **	28.7	576.5	344.5	9.1	1.000006
89000.0	17.7	-53.5	0.	-0. **	28.0	577.0	339.2	9.9	1.000006
89500.0	17.3	-53.1	0.	-0. **	27.3	577.6	343.0	10.3	1.000006
90000.0	16.9	-52.7	0.	-0. **	26.7	578.2	346.8	10.6	1.000006
90500.0	16.5	-52.2	0.	-0. **	26.0	578.8	350.2	10.7	1.000006
91000.0	16.1	-51.8	0.	-0. **	25.4	579.3	353.1	10.0	1.000006
91500.0	15.8	-51.3	0.	-0. **	24.7	579.9	355.9	9.3	1.000005
92000.0	15.4	-50.9	0.	-0. **	24.1	580.5	358.3	8.5	1.000005
92500.0	15.1	-50.5	0.	-0. **	23.5	581.1	359.5	7.3	1.000005
93000.0	14.7	-50.0	0.	-0. **	23.0	581.6	0.7	6.1	1.000005

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL

27 FEB. 69

ASCENSION NO. 157

UPPER AIR DATA

C825003903

WHITE SANDS SITE

WSTM SITE COORDINATES

E 488,580 FEET

N 185,045 FEET

TABLE VII (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS			
93500.0	14.4	-45.6	0.	-0. **	22.4	582.2		359.7	5.0	1.000005
94000.0	14.1	-49.1	0.	-0. **	21.9	582.8		352.5	3.9	1.000005
94500.0	13.7	-48.7	0.	-0. **	21.3	583.4		345.3	2.8	1.000005
95000.0	13.4	-48.3	0.	-0. **	20.8	583.9		335.0	2.2	1.000005
95500.0	13.1	-47.8	0.	-0. **	20.3	584.5		314.0	3.5	1.000005
96000.0	12.8	-47.4	0.	-0. **	19.8	585.1		293.0	4.8	1.000004
96500.0	12.5	-46.9	0.	-0. **	19.3	585.7		274.4	6.0	1.000004
97000.0	12.2	-46.5	0.	-0. **	18.8	586.2		265.4	6.6	1.000004
97500.0	12.0	-46.0	0.	-0. **	18.4	586.8		256.5	7.1	1.000004
98000.0	11.7	-45.6	0.	-0. **	17.9	587.4		249.0	7.7	1.000004
98500.0	11.4	-45.2	0.	-0. **	17.5	587.9		251.2	8.5	1.000004
99000.0	11.2	-44.7	0.	-0. **	17.0	588.5		253.4	9.3	1.000004
99500.0	10.9	-44.3	0.	-0. **	16.6	589.1		255.7	10.1	1.000004
100000.0	10.7	-43.8	0.	-0. **	16.2	589.6		261.3	10.6	1.000004
100500.0	10.4	-43.4	0.	-0. **	15.8	590.2		267.3	11.1	1.000004
101000.0	10.2	-43.0	0.	-0. **	15.4	590.8		273.3	11.6	1.000003
101500.0	10.0	-42.5	0.	-0. **	15.1	591.3		278.2	13.4	1.000003
102000.0	9.7	-42.1	0.	-0. **	14.7	591.9		282.3	16.3	1.000003
102500.0	9.5	-41.6	0.	-0. **	14.3	592.6		286.4	19.1	1.000003
103000.0	9.3	-41.0	0.	-0. **	14.0	593.2		290.1	21.7	1.000003
103500.0	9.1	-40.5	0.	-0. **	13.7	593.9		289.4	20.6	1.000003
104000.0	8.9	-40.0	0.	-0. **	13.3	594.5		288.7	19.4	1.000003
104500.0	8.7	-39.5	0.	-0. **	13.0	595.2		288.0	18.2	1.000003
105000.0	8.5	-39.0	0.	-0. **	12.7	595.8		287.7	17.8	1.000003
105500.0	8.4	-38.5	0.	-0. **	12.4	596.4		287.6	17.9	1.000003
106000.0	8.2	-38.0	0.	-0. **	12.1	597.1		287.5	18.1	1.000003
106500.0	8.0	-37.5	0.	-0. **	11.8	597.7		287.5	18.3	1.000003
107000.0	7.8	-37.0	0.	-0. **	11.6	598.4		288.1	15.3	1.000003
107500.0	7.7	-36.5	0.	-0. **	11.3	599.0		288.7	12.3	1.000003
108000.0	7.5	-36.0	0.	-0. **	11.0	599.7		289.3	9.3	1.000002

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69
ASCENSION NO. 197

UPPER AIR DATA
0825003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE VII (Cont.)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC MEYER	WIND DATA		INDEX OF REFRACTION
					DIRECTION DEGREES(TN)	SPEED KNOTS	
106500.0	7.3	-35.5	-0. **	10.8	600.3		1.000002
109000.0	7.2	-35.0	-0. **	10.5	600.9		1.000002
109500.0	7.0	-34.5	-0. **	10.2	601.6		1.000002
110000.0	6.9	-33.9	-0. **	10.0	602.2		1.000002
110500.0	6.7	-33.4	-0. **	9.8	602.9		1.000002
111000.0	6.6	-32.9	-0. **	9.5	603.5		1.000002
111500.0	6.4	-32.4	-0. **	9.3	604.1		1.000002

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 C600 HRS MST
ASCENSION NO. 197

MANDATORY LEVELS
0825003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE VIII

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4851.	9.8	-1.4	46.	333.0	6.9
800.0	6491.	5.6	-3.9	50.	292.0	18.1
750.0	8210.	1.2	-6.8	55.	286.6	20.5
700.0	10018.	-1.5	-17.5	29.	278.7	25.5
650.0	11951.	-3.6	-27.5	14.	279.8	29.0
600.0	14007.	-8.2	-30.1	15.	291.4	28.9
550.0	16202.	-14.1	-33.1	17.	293.8	28.5
500.0	18559.	-18.6	-36.7	19.	295.3	36.1
450.0	21107.	-24.6	-41.0	20.	291.8	35.0
400.0	23883.	-31.3	-46.4	21.	281.7	40.4
350.0	26943.	-37.3	-54.5	15.**	282.8	48.2
300.0	30399.	-42.5	0.	-0.**	280.8	50.2
250.0	34344.	-52.6	0.	-0.**	281.7	55.8
200.0	39060.	-54.5	0.	-0.**	274.2	72.0
175.0	41853.	-56.4	0.	-0.**	265.6	82.3
150.0	45054.	-58.1	0.	-0.**	267.9	76.9
125.0	48784.	-62.3	0.	-0.**	258.2	57.2
100.0	53250.	-67.4	0.	-0.**	245.4	57.7
80.0	57643.	-67.2	0.	-0.**	264.3	42.4
70.0	60310.	-64.9	0.	-0.**	296.7	23.1
60.0	63400.	-60.7	0.	-0.**	308.9	9.1
50.0	67126.	-57.8	0.	-0.**	271.8	19.3
40.0	71713.	-60.7	0.	-0.**	262.4	21.1
30.0	77624.	-60.7	0.	-0.**	321.3	10.7
25.0	81368.	-58.3	0.	-0.**	275.0	0.9
20.0	86007.	-55.3	0.	-0.**	332.8	10.9
15.0	92092.	-50.4	0.	-0.**	359.5	7.3
10.0	100924.	-42.6	0.	-0.**	277.5	12.9
7.0	108966.	-34.4	0.	-0.**		

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0900 HRS MST
ASCENSION NO. 198

SIGNIFICANT LEVEL DATA
0841003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488.580 FEET
N 185.045 FEET

TABLE IX

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
880.0	3989.0	10.0	-1.7	44.0
864.0	4487.9	8.0	-4.1	42.0
745.0	8445.4	0.1	-8.9	51.0
718.0	9414.1	-1.6	-14.1	38.0
707.0	9818.6	-0.6	-23.4	16.0
672.0	11152.3	0.1	-28.0	10.0
477.0	19835.4	-20.0	-40.1	15.0
400.0	24041.8	-30.2	-47.0	18.0
384.0	24992.5	-32.7	-49.1	18.0
347.0	27314.6	-37.9	0.	-0. **
240.0	35350.6	-56.1	0.	-0. **
224.0	36797.7	-55.3	0.	-0. **
213.0	37852.5	-56.7	0.	-0. **
135.0	47337.9	-58.4	0.	-0. **
120.0	45751.7	-62.4	0.	-0. **
100.0	53434.6	-66.1	0.	-0. **
95.0	54459.3	-66.5	0.	-0. **
80.0	57931.6	-61.6	0.	-0. **
72.0	60062.2	-66.3	0.	-0. **
54.0	65914.2	-59.2	0.	-0. **
45.0	69670.9	-61.1	0.	-0. **
36.0	74291.9	-57.2	0.	-0. **
28.0	89521.8	-59.2	0.	-0. **
17.5	89398.5	-53.2	0.	-0. **
11.5	98522.8	-44.8	0.	-0. **
7.0	109768.7	-34.6	0.	-0. **

** RELATIVE HUMIDITY NOT SUPPLIED. ZERO VALUE ASSUMED FOR COMPUTATIONS.

STATION ALTITUDE 3989.0 FEET MSL

27 FEB. 69

ASCENSION NO. 198

UPPER AIR DATA

0841003905

UNIT: SANDS SITE

WSIM SITE COORDINATES

E 488,580 FEET

N 185,045 FEET

TABLE X

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
3589.0	880.0	10.0	-1.7	44.0	1080.3	656.0	30.0	8.0	1.000266
4000.0	879.6	10.0	-1.7	44.0	1080.1	655.9	29.7	8.0	1.000266
4500.0	863.6	8.0	-4.1	42.0	1068.2	653.5	17.9	8.8	1.000260
5000.0	847.6	7.0	-6.7	43.2	1052.2	652.3	0.0	9.6	1.000255
5500.0	831.9	6.0	-5.3	44.3	1036.4	651.2	35.4	10.3	1.000251
6000.0	816.4	5.0	-5.9	45.4	1020.9	650.0	34.2	11.1	1.000247
6500.0	801.3	4.0	-6.4	46.6	1005.6	648.8	32.6	11.4	1.000243
7000.0	786.4	3.0	-7.1	47.7	990.6	647.6	30.7	11.4	1.000239
7500.0	771.8	2.0	-7.7	48.8	975.8	646.4	29.0	13.0	1.000235
8000.0	757.5	1.0	-8.3	50.0	961.2	645.2	29.3	15.2	1.000231
8500.0	743.5	0.0	-9.1	50.3	946.8	644.0	29.1	17.3	1.000226
9000.0	729.4	-0.9	-11.8	63.6	932.2	642.9	290.8	19.5	1.000220
9500.0	715.6	-1.4	-15.5	53.3	916.6	642.2	291.7	21.7	1.000214
10000.0	702.1	-0.5	-23.9	15.2	896.8	643.1	292.6	23.8	1.000204
10500.0	688.9	-0.2	-25.5	12.5	879.1	643.4	293.1	25.6	1.000200
11000.0	675.9	0.0	-27.4	10.7	861.8	643.7	293.6	27.3	1.000195
11500.0	662.8	-0.7	-28.4	10.2	847.4	642.8	293.4	27.8	1.000192
12000.0	649.9	-1.9	-29.0	10.5	834.4	641.4	293.1	27.9	1.000189
12500.0	637.2	-3.0	-29.7	10.8	821.6	640.1	292.2	27.6	1.000186
13000.0	624.7	-4.2	-30.3	11.1	809.7	638.7	291.3	27.3	1.000183
13500.0	612.5	-5.3	-31.0	11.4	796.6	637.3	291.0	26.7	1.000180
14000.0	600.6	-6.5	-31.6	11.6	784.5	635.9	290.7	26.2	1.000177
14500.0	588.8	-7.6	-32.3	11.9	772.5	634.5	291.1	26.3	1.000174
15000.0	577.3	-8.8	-33.0	12.2	760.7	633.2	291.5	26.5	1.000171
15500.0	566.0	-10.0	-33.7	12.5	749.2	631.8	291.8	26.5	1.000169
16000.0	555.0	-11.1	-34.4	12.8	737.9	630.4	292.0	26.4	1.000166
16500.0	544.1	-12.3	-35.1	13.1	726.6	629.0	293.1	26.5	1.000164
17000.0	533.5	-13.4	-35.8	13.4	715.5	627.6	294.2	26.6	1.000161
17500.0	523.1	-14.6	-36.5	13.7	704.7	626.2	294.5	26.3	1.000158
18000.0	512.8	-15.8	-37.3	13.9	694.1	624.8	294.9	26.0	1.000156

UPPER AIR DATA
0841003805
WHITE SANDS SITE

WSM SITE COORDINATES
E 488.580 FEET
N 185.045 FEET

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0900 HRS MST
ASCENSION NO. 198

TABLE X (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM.- PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
18500.0	502.8	-16.9	14.2	683.6	623.4	295.5	25.3	1.000154
19000.0	493.0	-18.1	14.5	673.3	621.9	296.2	24.6	1.000151
19500.0	483.4	-19.2	14.8	663.1	620.5	296.7	24.3	1.000149
20000.0	473.7	-20.4	15.1	652.9	619.1	297.5	24.2	1.000146
20500.0	463.9	-21.6	15.5	642.5	617.6	300.2	24.6	1.000144
21000.0	454.3	-22.8	15.8	632.2	616.1	302.9	25.3	1.000142
21500.0	444.9	-24.0	16.2	622.2	614.6	305.5	26.2	1.000139
22000.0	435.7	-25.2	16.5	612.3	613.1	307.9	27.9	1.000137
22500.0	426.7	-26.5	16.9	602.5	611.6	310.2	30.1	1.000135
23000.0	417.8	-27.7	17.3	593.0	610.1	311.2	31.8	1.000133
23500.0	409.2	-28.9	17.6	583.6	608.6	311.7	33.3	1.000131
24000.0	400.7	-30.1	18.0	574.4	607.1	310.5	35.6	1.000128
24500.0	392.2	-31.4	18.0	565.2	605.4	308.9	38.1	1.000126
25000.0	383.9	-32.7	17.9**	556.2	603.8	306.7	39.8	1.000124
25500.0	375.6	-33.8	14.1**	546.8	602.4	304.5	41.3	1.000122
26000.0	367.5	-35.0	10.2**	537.5	601.0	302.6	43.4	1.000120
26500.0	359.6	-36.1	6.3**	528.4	599.5	300.8	45.5	1.000118
27000.0	351.8	-37.2	2.4**	519.5	598.1	299.9	47.1	1.000116
27500.0	344.1	-38.3	-0. **	510.5	596.7	299.2	48.7	1.000114
28000.0	336.3	-39.5	-0. **	501.3	595.2	299.1	51.5	1.000112
28500.0	328.6	-40.6	-0. **	492.3	593.8	298.7	53.7	1.000110
29000.0	321.2	-41.7	-0. **	483.5	592.4	297.4	54.0	1.000108
29500.0	313.9	-42.8	-0. **	474.9	590.9	295.7	53.2	1.000106
30000.0	306.8	-44.0	-0. **	466.4	589.5	293.7	51.3	1.000104
30500.0	299.8	-45.1	-0. **	458.1	588.0	291.2	50.4	1.000102
31000.0	293.0	-46.2	-0. **	449.9	586.5	288.3	50.3	1.000100
31500.0	286.4	-47.4	-0. **	441.9	585.1	286.4	52.1	1.000098
32000.0	279.9	-48.5	-0. **	434.1	583.6	285.3	55.2	1.000097
32500.0	273.5	-49.6	-0. **	426.4	582.1	284.6	58.0	1.000095
33000.0	267.3	-50.8	-0. **	418.9	580.6	284.2	60.6	1.000093

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0900 HRS MST
ASCENSION NO. 198

UPPER AIR DATA
0841003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488.580 FEET
N 185.045 FEET

TABLE X (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE			KNOTS	KNOTS			
33500.0	261.3	-51.9	0.	-0. **	411.4	579.2	284.1	61.9	1.000092	
34000.0	255.3	-53.0	0.	-0. **	404.2	577.7	284.4	62.0	1.000030	
34500.0	249.6	-54.2	0.	-0. **	397.1	576.2	284.1	62.2	1.000088	
35000.0	243.9	-55.3	0.	-0. **	390.1	574.7	283.3	62.7	1.000087	
35500.0	238.3	-56.0	0.	-0. **	382.4	573.8	282.8	63.9	1.000085	
36000.0	232.7	-55.7	0.	-0. **	372.9	574.1	282.9	66.7	1.000083	
36500.0	227.2	-55.5	0.	-0. **	363.6	574.5	282.6	69.3	1.000081	
37000.0	221.8	-55.6	0.	-0. **	355.2	574.4	281.1	71.3	1.000079	
37500.0	216.6	-56.2	0.	-0. **	347.9	573.5	280.1	73.5	1.000077	
38000.0	211.5	-56.7	0.	-0. **	340.5	572.8	280.8	75.9	1.000076	
38500.0	206.5	-56.8	0.	-0. **	332.5	572.7	281.3	78.1	1.000074	
39000.0	201.6	-56.9	0.	-0. **	324.8	572.6	280.3	78.3	1.000072	
39500.0	196.8	-57.0	0.	-0. **	317.2	572.5	279.3	78.5	1.000071	
40000.0	192.1	-57.1	0.	-0. **	309.8	572.4	278.5	78.7	1.000069	
40500.0	187.5	-57.2	0.	-0. **	302.5	572.2	277.8	78.9	1.000067	
41000.0	183.1	-57.3	0.	-0. **	295.5	572.1	275.8	79.1	1.000066	
41500.0	178.7	-57.4	0.	-0. **	288.6	572.0	273.6	79.3	1.000064	
42000.0	174.5	-57.4	0.	-0. **	281.8	571.9	272.3	80.6	1.000063	
42500.0	170.4	-57.5	0.	-0. **	275.3	571.8	271.8	83.0	1.000061	
43000.0	166.3	-57.6	0.	-0. **	268.0	571.6	271.0	85.2	1.000060	
43500.0	162.4	-57.7	0.	-0. **	262.6	571.5	269.4	86.6	1.000058	
44000.0	158.5	-57.8	0.	-0. **	256.4	571.4	267.7	88.0	1.000057	
44500.0	154.7	-57.9	0.	-0. **	250.5	571.3	267.5	89.9	1.000056	
45000.0	151.1	-58.0	0.	-0. **	244.6	571.2	267.6	91.9	1.000054	
45500.0	147.5	-58.1	0.	-0. **	238.9	571.0	267.0	90.1	1.000053	
46000.0	144.0	-58.2	0.	-0. **	233.3	570.9	266.0	85.5	1.000052	
46500.0	140.5	-58.2	0.	-0. **	227.9	570.8	266.1	82.8	1.000051	
47000.0	137.2	-58.3	0.	-0. **	222.6	570.7	267.2	81.6	1.000050	
47500.0	133.9	-58.7	0.	-0. **	217.6	570.3	264.6	78.3	1.000048	
48000.0	130.7	-59.5	0.	-0. **	213.2	569.2	264.2	72.8	1.000047	

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0900 HRS MST
ASCENSION NO. 198

UPPER AIR DATA
0841003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE X (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM./CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
48500.0	127.6	-60.3	-0.0	208.8	568.1	261.7	69.0	1.000047
49000.0	124.5	-61.1	-0.0	204.6	566.9	259.4	71.8	1.000046
49500.0	121.5	-62.0	-0.0	200.5	565.8	257.0	74.5	1.000045
50000.0	118.6	-62.7	-0.0	196.3	564.9	257.1	73.6	1.000044
50500.0	115.7	-63.2	-0.0	191.9	564.2	257.7	72.2	1.000043
51000.0	112.8	-63.7	-0.0	187.7	563.5	257.5	71.4	1.000042
51500.0	110.1	-64.2	-0.0	183.6	562.8	256.7	71.2	1.000041
52000.0	107.4	-64.8	-0.0	179.5	562.1	256.4	70.7	1.000040
52500.0	104.7	-65.3	-0.0	175.6	561.4	258.0	68.8	1.000039
53000.0	102.2	-65.8	-0.0	171.7	560.6	259.7	66.9	1.000038
53500.0	99.7	-66.3	-0.0	167.9	560.0	259.2	66.0	1.000037
54000.0	97.2	-66.4	-0.0	163.8	559.9	258.3	65.2	1.000036
54500.0	94.8	-66.4	-0.0	159.8	559.8	260.1	63.7	1.000036
55000.0	92.5	-65.7	-0.0	155.4	560.8	263.7	61.8	1.000035
55500.0	90.2	-65.0	-0.0	151.1	561.7	267.7	58.8	1.000034
56000.0	88.0	-64.3	-0.0	146.9	562.7	272.0	54.2	1.000033
56500.0	85.9	-63.6	-0.0	142.8	563.6	276.4	49.7	1.000032
57000.0	83.8	-62.9	-0.0	138.8	564.6	281.0	45.5	1.000031
57500.0	81.7	-62.2	-0.0	135.0	565.5	285.6	41.2	1.000030
58000.0	79.7	-61.8	-0.0	131.4	566.1	288.4	37.6	1.000029
58500.0	77.8	-62.9	-0.0	128.9	564.7	290.5	32.7	1.000028
59000.0	75.9	-64.0	-0.0	126.4	563.2	292.5	28.4	1.000028
59500.0	74.0	-65.1	-0.0	124.0	561.7	289.2	22.9	1.000028
60000.0	72.2	-66.2	-0.0	121.6	560.2	285.7	17.3	1.000027
60500.0	70.5	-65.8	-0.0	118.4	560.7	280.3	12.6	1.000026
61000.0	68.8	-65.2	-0.0	115.2	561.6	267.3	10.8	1.000026
61500.0	67.1	-64.6	-0.0	112.1	562.4	254.3	9.0	1.000025
62000.0	65.5	-63.9	-0.0	109.0	563.2	242.2	9.2	1.000024
62500.0	63.9	-63.3	-0.0	106.1	564.0	230.7	10.6	1.000024
63000.0	62.3	-62.7	-0.0	103.2	564.8	219.0	11.8	1.000023

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL

27 FEB. 69

ASCENSION NO. 198

UPPER AIR DATA

0841003905

WHITE SANDS SITE

WSIM SITE COORDINATES

E 488,580 FEET

N 185,045 FEET

TABLE X (Cont.)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
					KNOTS	KNOTS			
63500.0	60.8	-62.1	-0. **	100.4	565.6		206.2	11.7	1.000022
64000.0	59.3	-61.5	-0. **	97.7	566.4		193.5	11.7	1.000022
64500.0	57.9	-60.9	-0. **	95.0	567.3		202.3	12.6	1.000021
65000.0	56.5	-60.3	-0. **	92.5	568.1		217.2	13.8	1.000021
65500.0	55.1	-59.7	-0. **	90.0	568.9		229.8	14.6	1.000020
66000.0	53.8	-59.2	-0. **	87.6	569.5		238.4	15.0	1.000020
66500.0	52.5	-59.5	-0. **	85.6	569.2		247.1	15.4	1.000019
67000.0	51.2	-59.7	-0. **	83.6	568.8		254.6	18.3	1.000019
67500.0	50.0	-60.0	-0. **	81.7	568.5		260.7	24.5	1.000018
68000.0	48.8	-60.3	-0. **	79.9	568.1		266.0	30.6	1.000018
68500.0	47.6	-60.5	-0. **	78.0	567.8		272.8	36.8	1.000017
69000.0	46.5	-60.8	-0. **	76.3	567.5		273.5	35.2	1.000017
69500.0	45.4	-61.0	-0. **	74.5	567.1		273.8	33.1	1.000017
70000.0	44.3	-60.8	-0. **	72.7	567.4		274.1	31.1	1.000016
70500.0	43.2	-60.4	-0. **	70.8	567.9		275.0	29.7	1.000016
71000.0	42.2	-60.0	-0. **	69.0	568.5		276.7	28.9	1.000015
71500.0	41.2	-59.6	-0. **	67.2	569.1		278.3	28.2	1.000015
72000.0	40.2	-59.1	-0. **	65.5	569.6		279.9	27.5	1.000015
72500.0	39.3	-58.7	-0. **	63.8	570.2		283.4	23.8	1.000014
73000.0	38.3	-58.3	-0. **	62.1	570.8		287.0	20.0	1.000014
73500.0	37.4	-57.9	-0. **	60.5	571.3		290.6	16.2	1.000012
74000.0	36.5	-57.4	-0. **	59.0	571.9		298.5	13.4	1.000013
74500.0	35.6	-57.3	-0. **	57.5	572.1		310.1	11.4	1.000013
75000.0	34.8	-57.5	-0. **	56.2	571.8		321.7	9.3	1.000013
75500.0	34.0	-57.7	-0. **	54.9	571.6		332.9	7.3	1.000012
76000.0	33.2	-57.9	-0. **	53.7	571.3		343.6	5.4	1.000012
76500.0	32.4	-58.0	-0. **	52.4	571.1		354.3	3.4	1.000012
77000.0	31.6	-58.2	-0. **	51.2	570.8		348.2	2.8	1.000011
77500.0	30.9	-58.4	-0. **	50.1	570.6		339.9	2.3	1.000011
78000.0	30.1	-58.6	-0. **	48.9	570.3		329.0	2.3	1.000011

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0900 HRS MST
ASCENSION NO. 198

UPPER AIR DATA
0841003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 489.580 FEET
N 185.045 FEET

TABLE X (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES (T)	SPEED KNOTS	
78500.0	29.4	-58.8	0.	-0. **	47.8	570.1	309.1	309.1	3.7	1.000011
79000.0	28.7	-55.0	0.	-0. **	46.7	569.8	289.1	289.1	5.2	1.000010
79500.0	28.0	-59.2	0.	-0. **	45.6	569.6	280.3	280.3	6.5	1.000010
80000.0	27.4	-58.9	0.	-0. **	44.5	569.9	280.2	280.2	7.8	1.000010
80500.0	26.7	-58.6	0.	-0. **	43.4	570.3	280.2	280.2	9.0	1.000010
81000.0	26.1	-58.3	0.	-0. **	42.3	570.7	291.1	291.1	8.0	1.000009
81500.0	25.5	-58.0	0.	-0. **	41.3	571.1	303.6	303.6	6.7	1.000009
82000.0	24.9	-57.7	0.	-0. **	40.2	571.5	314.3	314.3	5.7	1.000009
82500.0	24.3	-57.4	0.	-0. **	39.2	571.9	317.4	317.4	6.2	1.000009
83000.0	23.7	-57.1	0.	-0. **	38.3	572.4	320.5	320.5	6.7	1.000009
83500.0	23.2	-56.8	0.	-0. **	37.3	572.8	330.9	330.9	7.6	1.000008
84000.0	22.6	-56.5	0.	-0. **	36.4	573.2	351.4	351.4	8.9	1.000008
84500.0	22.1	-56.2	0.	-0. **	35.5	573.6	11.9	11.9	10.3	1.000008
85000.0	21.6	-55.9	0.	-0. **	34.6	574.0	24.4	24.4	11.3	1.000008
85500.0	21.1	-55.6	0.	-0. **	33.7	574.4	16.0	16.0	11.3	1.000008
86000.0	20.6	-55.3	0.	-0. **	32.9	574.8	7.6	7.6	11.2	1.000007
86500.0	20.1	-55.0	0.	-0. **	32.1	575.2	359.1	359.1	11.2	1.000007
87000.0	19.6	-54.7	0.	-0. **	31.3	575.6	5.8	5.8	12.1	1.000007
87500.0	19.2	-54.4	0.	-0. **	30.5	576.0	15.5	15.5	13.1	1.000007
88000.0	18.7	-54.0	0.	-0. **	29.7	576.4	25.2	25.2	14.2	1.000007
88500.0	18.3	-53.7	0.	-0. **	29.0	576.8	29.5	29.5	14.3	1.000006
89000.0	17.8	-53.4	0.	-0. **	28.3	577.2	25.3	25.3	12.7	1.000006
89500.0	17.4	-53.1	0.	-0. **	27.6	577.6	21.1	21.1	11.1	1.000006
90000.0	17.0	-52.6	0.	-0. **	26.9	578.2	17.0	17.0	9.5	1.000006
90500.0	16.6	-52.2	0.	-0. **	26.2	578.8	18.3	18.3	9.0	1.000006
91000.0	16.3	-51.7	0.	-0. **	25.6	579.4	20.4	20.4	8.6	1.000006
91500.0	15.9	-51.3	0.	-0. **	24.9	580.0	22.5	22.5	8.2	1.000006
92000.0	15.5	-50.8	0.	-0. **	24.3	580.6	29.2	29.2	7.6	1.000005
92500.0	15.2	-50.3	0.	-0. **	23.7	581.2	45.0	45.0	6.6	1.000005
93000.0	14.8	-49.9	0.	-0. **	23.1	581.8	60.9	60.9	5.5	1.000005

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA
0841003905
WHITE SANDS SITE

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0900 HRS MST
ASCENSION NO. 198

WSIM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE X (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL-HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS			
93500.0	14.5	-49.4	0.	-0. **	22.6	582.4		76.7	4.5	1.000005
94000.0	14.2	-49.0	0.	-0. **	22.0	583.0		57.3	3.8	1.000005
94500.0	13.8	-48.5	0.	-0. **	21.5	583.6		27.4	3.1	1.000005
95000.0	13.5	-48.0	0.	-0. **	20.9	584.2		357.4	2.5	1.000005
95500.0	13.2	-47.6	0.	-0. **	20.4	584.8		341.3	2.3	1.000005
96000.0	12.9	-47.1	0.	-0. **	19.9	585.4		17.1	1.9	1.000004
96500.0	12.6	-46.7	0.	-0. **	19.4	586.0		53.0	5.6	1.000004
97000.0	12.3	-46.2	0.	-0. **	18.9	586.6		88.9	7.2	1.000004
97500.0	12.1	-45.7	0.	-0. **	18.5	587.2		133.7	8.1	1.000004
98000.0	11.8	-45.3	0.	-0. **	18.0	587.8		183.4	8.5	1.000004
98500.0	11.5	-44.8	0.	-0. **	17.6	588.4		233.2	8.9	1.000004
99000.0	11.3	-44.4	0.	-0. **	17.1	589.0		281.7	9.3	1.000004
99500.0	11.0	-43.9	0.	-0. **	16.7	589.5		287.2	9.2	1.000004
100000.0	10.8	-43.5	0.	-0. **	16.3	590.1		292.7	9.1	1.000004
100500.0	10.5	-43.0	0.	-0. **	16.0	590.7		298.2	9.1	1.000004
101000.0	10.3	-42.6	0.	-0. **	15.6	591.3		301.4	9.9	1.000003
101500.0	10.1	-42.1	0.	-0. **	15.2	591.9		299.9	12.4	1.000003
102000.0	9.9	-41.6	0.	-0. **	14.8	592.4		298.5	14.9	1.000003
102500.0	9.6	-41.2	0.	-0. **	14.5	593.0		297.1	17.3	1.000003
103000.0	9.4	-40.7	0.	-0. **	14.1	593.6		296.7	18.2	1.000003
103500.0	9.2	-40.3	0.	-0. **	13.8	594.2		296.9	17.9	1.000003
104000.0	9.0	-39.8	0.	-0. **	13.5	594.8		297.1	17.7	1.000003
104500.0	8.8	-39.4	0.	-0. **	13.2	595.3		297.4	17.5	1.000003
105000.0	8.6	-38.9	0.	-0. **	12.9	595.9				1.000003
105500.0	8.5	-38.5	0.	-0. **	12.5	596.5				1.000003
106000.0	8.3	-38.0	0.	-0. **	12.2	597.1				1.000003
106500.0	8.1	-37.6	0.	-0. **	12.0	597.6				1.000003
107000.0	7.9	-37.1	0.	-0. **	11.7	598.2				1.000003
107500.0	7.7	-36.7	0.	-0. **	11.4	598.8				1.000003
108000.0	7.6	-36.2	0.	-0. **	11.1	599.4				1.000002

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
27 FEB. 69 0900 HRS MST
ASCENSION NO. 198

UPPER AIR DATA
0841003905
WHITE SANDS SITE

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

TABLE X (Cont).

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
108500.0	7.4	-35.8	0.	-0. **	10.9	599.9				1.000002
109000.0	7.2	-35.3	0.	-0. **	10.6	600.5				1.000002
109500.0	7.1	-34.8	0.	-0. **	10.4	601.1				1.000002

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL

27 FEB. 69

ASCENSION NO. 198

MANDATORY LEVELS

0841003905

WHITE SANDS SITE

WSTM SITE COORDINATES

E 488,580 FEET

N 185,045 FEET

TABLE XI

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4528.	7.1	-4.6	43.	7.7	9.4
800.0	6555.	3.9	-6.5	47.	324.3	11.4
750.0	8265.	0.5	-8.6	51.	292.1	16.3
700.0	10074.	-0.5	-24.1	15.	292.8	24.2
650.0	12016.	-1.9	-29.0	10.	293.0	27.9
600.0	14086.	-6.5	-31.6	12.	290.8	26.2
550.0	16294.	-11.6	-34.7	13.	292.7	26.5
500.0	18664.	-17.2	-38.3	14.	295.8	25.1
450.0	21224.	-23.4	-42.3	16.	304.2	25.8
400.0	24013.	-30.2	-47.0	18.	310.4	35.8
350.0	27083.	-37.5	-71.6	2.**	299.7	47.5
300.0	30517.	-45.1	0.	-0.**	290.8	50.4
250.0	34435.	-54.1	0.	-0.**	284.2	62.2
200.0	39092.	-56.9	0.	-0.**	280.0	78.4
175.0	41863.	-57.4	0.	-0.**	272.4	80.4
150.0	45054.	-58.0	0.	-0.**	267.6	92.5
125.0	48809.	-61.0	0.	-0.**	259.7	71.3
100.0	53297.	-66.3	0.	-0.**	259.3	66.1
80.0	57769.	-61.6	0.	-0.**	288.1	37.6
70.0	60449.	-65.6	0.	-0.**	277.1	12.1
60.0	63551.	-61.8	0.	-0.**	200.0	11.7
50.0	67284.	-60.0	0.	-0.**	260.7	24.5
40.0	71848.	-59.0	0.	-0.**	280.6	26.8
30.0	77196.	-58.7	0.	-0.**	325.6	2.5
25.0	81555.	-57.8	0.	-0.**	312.9	5.7
20.0	86204.	-54.9	0.	-0.**	358.1	11.2
15.0	92297.	-50.1	0.	-0.**	51.6	6.2
10.0	101146.	-41.9	0.	-0.**	299.6	13.0
7.0	109197.	-34.6	0.	-0.**		

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

RELEASE TIME (MST)		SECOND-STAGE IMPACT DISPLACEMENT IN MILES DUE TO WIND										AZI- MUTH (DEG- REES)	THEORETICAL IMPACT FROM LAUNCHER (IN MILES)				
		11-216 FT				216-4270 FT				TOTAL							
		N-S		E-W		N-S		E-W		N-S						E-W	
		RAWIN- SONDE	PIBAL	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W					RANGE	N-S
0600	0700	3.4N	0.1E	9.7N	13.2W	2.2S	35.3W	10.9N	48.4W	331.0	65.1	56.9N	31.6W				
0600	0730	3.0N	1.9E	10.1N	13.1W	2.2S	35.3W	10.9N	46.5W	332.4	64.2	56.9N	29.7W				
0600	0800	7.5N	4.4E	13.8N	2.1E	2.2S	35.3W	19.1N	28.8W	349.6	66.2	65.1N	12.0W				
0600	0815	11.1N	2.6E	18.0N	2.7E	2.2S	35.3W	26.9N	30.0W	349.7	74.1	72.9N	13.2W				
0600	0830	10.6N	3.7E	21.2N	3.9E	2.2S	35.3W	29.6N	27.7W	351.8	76.4	75.6N	10.9W				
0600	0845	13.1N	2.0E	20.9N	2.4E	2.2S	35.3W	31.8N	30.9W	349.7	79.1	77.8N	14.1W				
0600	0855	11.0N	4.8E	21.6N	4.0E	2.2S	35.3W	30.4N	26.5W	352.8	77.0	76.4N	9.7W				
0600	0905	11.2N	3.2E	20.6N	2.8E	2.2S	35.3W	29.6N	29.3W	350.6	76.6	75.6N	12.5W				
*0900	*0914	12.9N	2.3E	22.2N	2.8E	1.2N	39.1W	36.3N	34.0W	348.2	84.0	82.3N	17.2W				

*Post-shoot Data

**Sonic Observation
of the Trajectory
and Impact of
Missiles.

LAUNCHER SETTING (ELEVATION 86.5 DEGREES QE)	AZI- MUTH (DEG- REES)	MILES FROM LAUNCHER		
		RANGE	N-S	E-W
NO WIND IMPACT	018.9	49.0	46.0N	16.8E
PREDICTED SECOND-STAGE IMPACT	350.0	75.0	73.9N	13.0W
SECOND-STAGE IMPACT, SOTIM**	349.1	83.3	81.8N	15.8W
PREDICTED BOOSTER IMPACT	065.0	1.6	0.7N	1.5E
ACTUAL BOOSTER IMPACT	N/A	N/A	N/A	N/A

TABLE XII. IMPACT PREDICTION DATA
NIKE-HYDAC STV-84

UNCLASSIFIED

Security Classification

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(Security classification of this, body of abstract and indexing annotation must be entered when the source report is classified)

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11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY	
		U. S. Army Electronics Command Atmospheric Sciences Office White Sands Missile Range, New Mexico	
13. ABSTRACT			
<p>Meteorological data gathered for the launching of Nike-Hydac STV-84 are presented for the Space and Missile Systems Organization, AFMDC, Holloman Air Force Base, New Mexico, and for ballistic studies. The data appear, along with calculated ballistic data, in tabular form. (</p>			

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